

(1 of 2)

PTO/SB/08A (10-01)

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**INFORMATION DISCLOSURE
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Sheet 1 of 3

Complete if Known

Application Number	10/072,728
Filing Date	February 7, 2002
First Named Inventor	Chester L. Schuler
Art Unit	2675
Examiner Name	Ming-Hun Liu
Attorney Docket Number	IMMR092/02US

U.S. PATENT DOCUMENTS

Examiner	Cite No. ¹	Document Number Number Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
/SKK/		6,160,489	12/12/2000	Perry et al.	
		6,111,577	8/29/2000	Zilles et al.	
		5,690,582	11/25/1997	Ulrich et al.	
		5,575,761	11/19/1996	Hajlanpour	
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		5,165,897	11/24/1992	Johnson	
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		4,262,549	4/21/1981	Schwellenbach	
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		2,972,140	2/14/1961	Hirsch	
		4,939,594	7/3/1990	Moxon	
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		4,685,003	8/4/1987	Westland	
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		5,191,320	3/2/1993	Mackay	
		5,187,630	2/16/1993	Mackay	
		4,652,805	3/24/1987	Kohn	
		4,553,080	11/12/1985	Cannon	

Examiner Initials*	Cite No. ¹	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Country Code ³	Number ⁴	Kind Code ⁵ (if known)			
		GB	2 016 225		9/19/1979	Ricoh Company	

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Sheet **2** of **3****Complete If Known**Application Number **10/072,728**Filing Date **February 7, 2002**First Named Inventor **Chester L. Schuler**Art Unit **2675**Examiner Name **Ming-Hun Liu**Attorney Docket Number **IMMR092/02US****OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS**

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
		PATRICK, "Design, Construction, and Testing of a Fingertip Tactile Display for Interaction with Virtual and Remote Environments," <i>Master of Science Thesis</i> , MIT, Aug. 1990, archived Nov. 8, 1990.
		CALDER, "Design of A Force Feedback Touch-Introducing Actuator For Teleoperator Robot Control," <i>Bachelor of Science Thesis</i> , MIT, May 1983, archived June 23, 1983.
		WIKER, "Teletouch Display Development: Phase 1 Report," <i>Technical Report 1230</i> , Naval Ocean Systems Center, San Diego, July 1988.
		BLISS, "Optical-to-Tactile Image Conversion for the Blind," <i>IEEE Transactions on Man-Machine Systems</i> , Vol. MMS-11, No. 1, March 1970.
		JOHNSON, "Shape-Memory Alloy Tactile Feedback Actuator," <i>Armstrong Aerospace Medical Research Laboratory</i> , AAMRL-TR-90-039, August, 1990.
		KONTARINIS et al., "Tactile Display of Vibratory Information in Teleoperation and Virtual Environments," <i>PRESENCE</i> , 4(4):387-402, Harvard Univ., 1995.
		AUKSTAKALNIS et al., "Silicon Mirage: The Art and Science of Virtual Reality," ISBN 0-938151-82-7, pp. 129-180, 1992.
		EBERHARDT et al., "Inducing Dynamic Haptic Perception by The Hand: System Description and Some Results," <i>DSC-Vol. 55-1, Dynamic Systems and Control: Volume 1</i> , ASME 1994.
		GOBEL et al., "Tactile Feedback Applied to Computer Mice," <i>International Journal of Human-Computer Interaction</i> , Vol. 7, No. 1, pp. 1-24, 1995.
		PIMENTEL et al., "Virtual Reality: through the new looking glass," 2 nd Edition, McGraw-Hill, ISBN 0-07-050487-X, pp. 41-202, 1994.
		"Cyberman Technical Specification," <i>Logitech Cyberman SWIFT Supplement to Logitech Mouse Technical Reference and Programming Guide</i> , 4/5/1994.
		OUHYOUNG et al., "The Development of A Low-Cost Force Feedback Joystick and Its Use in the Virtual Reality Environment," <i>Proceedings of the Third Pacific Conference on Computer Graphics and Applications, Pacific Graphics '95</i> , Seoul, Korea, 21-24 August 1995.
		KACZMAREK et al., "Tactile Displays," <i>Virtual Environment Technologies</i> , Chap. 9, pp. 349-414.
		LAKE, "Cyberman from Logitech," at http://www.ibiblio.org/GameBytes/Issue21/greviews/cyberman.html , 1994.
		YAMAKITA et al., "Tele-Virtual Reality of Dynamic Mechanical Model," <i>Proceedings of the 1992 IEEE/RSJ International Conference on Intelligent Robots and Systems</i> , Raleigh, NC, July 7-10, 1992.

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		NOLL, "Man-Machine Tactile," <i>S/D Journal</i> , July/August 1972 issue.
		ROSENBERG, "Virtual Fixtures: Perceptual Overlays Enhance Operator Performance in Telepresence Tasks," <i>Ph.D. Dissertation</i> , Stanford University, June 1994.

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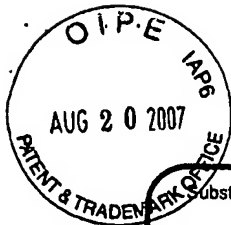
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First Named Inventor	Chester L. Schuler
Art Unit	2675
Examiner Name	Ming Hun Liu
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Examiner	Cite No.	Document Number Number Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
/SKK/		3,765,624	10-1973	Karluka	
		3,875,488	04-01-1975	Crocker et al.	
		3,923,166	12-1975	Fletcher et al.	
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		4,964,004	10-1990	Barker	

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Sheet 2

of 11

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Application Number 10/072,728

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First Named Inventor Chester L. Schuler

Art Unit 2675

Examiner Name Ming Hun Liu

Attorney Docket Number IMMR092/02US

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/SKK/		4,979,050	12-1990	Westland et al.	
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**INFORMATION DISCLOSURE
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Sheet **5** of **11****Complete If Known**

Application Number	10/072,728
Filing Date	February 7, 2002
First Named Inventor	Chester L. Schuler
Art Unit	2675
Examiner Name	Ming Hun Liu
Attorney Docket Number	IMMR092/02US

Examiner Initials*	Cite No. ¹	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Country Code ³	Number ⁴	Kind Code ⁵ (if known)			
		DE	4 400 790	A1	05-18-1995		
		EP	0 349 086		03-01-1990		
		EP	0 111 992		09-1983		
		EP	0085518	A1	08-10-1983		
		EP	0607580	A1	07-27-1994		
		EP	0265011		04-27-1988		
		EP	0626634	A2	11-30-1994		
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		GB	2 235 310	A	06-1990		
		JP	H4-8381		01/13/1992	Taito Corporation	
		JP	H2-185278		07/19/1990	Taito Corporation	
		JP	H7-24147		01/27/1995	Taito Corporation	
		JP	H5-192449		08/03/1993	Taito Corporation	
		JP	H5-86387		11-22-1993		
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		JP	H4-92691		03-25-1992		
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		WO	01/11775	A1	02-15-2001	Peter Gold	
		WO	9520787		08-03-1993		
		WO	9532459		11-30-1995		
		WO	9721160		06-12-1997		
		WO	9200559		01-09-1992		

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Sheet

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of

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First Named Inventor	Chester L. Schuler
Art Unit	2675
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Attorney Docket Number	IMMR092/02US

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
		SCANNELL, "Taking a Joystick Ride," Computer Currents, Boston Edition, Vol. 9, No. 11, November 1994.
		"Component Maintenance Manual With Illustrated Parts List, Coaxial Control Shaker Part No. C-25502," Safe Flight Instrument Corporation, Revised 28 January 2002 (3 pages).
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		BURDEA et al., "Dextrous telerobotics with force feedback – an overview. Part 2: Human factors," Robotics (1991) Volume 9, pp. 291-298, (06/22/1990)
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		BEJCZY et al., "Controlling Remote Manipulators Through Kinesthetic Coupling," Computers in Mechanical Engineering NT Control No. MPO-17851; JPL Case No. 5348 Attachment, pp. 48-61, (July 1983)
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Sheet **7** of **11****Complete if Known**

Application Number	10/072,728
Filing Date	February 7, 2002
First Named Inventor	Chester L. Schuler
Art Unit	2675
Examiner Name	Ming Hun Liu
Attorney Docket Number	IMMR092/02US

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS		
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
		WRIGHT, "A Manufacturing Hand," ISSN 0736-5845/85 (704), pp. 13-23, (1985)
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Substitute for form 1449A/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Application Number	10/072,728
		Filing Date	February 7, 2002
		First Named Inventor	Chester L. Schuler
		Art Unit	2675
		Examiner Name	Ming Hun Liu
		Attorney Docket Number	IMMR092/02US
Sheet	8	of	11

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Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	
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Sheet 9

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Art Unit	2675
Examiner Name	Ming Hun Liu
Attorney Docket Number	IMMR092/02US

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Sheet 10 of 11

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First Named Inventor	Chester L. Schuler
Art Unit	2675
Examiner Name	Ming Hun Liu
Attorney Docket Number	IMMR092/02US

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